

## **Cedar River Habitat Conservation Plan Year 2 Accomplishments Report**

### **Executive Summary**

**May 2003**

This report marks the completion of the second full year of implementation of the Cedar River Habitat Conservation Plan (HCP). In April 2000 the City of Seattle, along with state and federal agencies, signed the agreements to the HCP, launching a comprehensive 50-year effort to protect and improve habitat for 83 species of fish and wildlife in the Cedar River Watershed. Seattle Public Utilities and Seattle City Light focussed their Year 1 implementation efforts on creating and chartering the implementation team and oversight committees, developing management tools for ongoing program implementation, and planning and designing the program elements. In addition, construction work started on several capital projects and new instream flow and forest management prescriptions were begun. Creating business systems and project planning during the first year of HCP Implementation provided a solid foundation for additional on-the-ground projects and research and monitoring to proceed in Year 2.

The program element summaries that follow this Executive Summary collectively describe a year of intensive effort implementing the HCP's goals and commitments for ecological protection and restoration.

This report follows the organization of the HCP, which is divided into three general categories: Watershed Management, Landsburg Mitigation, and Instream Flows. Within each of these categories there are a number of projects, and research and monitoring efforts, each considered a separate HCP "program element." Most of this report is comprised of summaries of each of the "program elements" which discuss the goals and objectives, work accomplished in 2002 (including any issues or challenges that may have arisen), work planned for 2003, and a financial summary. This report also includes an overview of the Anadromous Fish Committee's Year 2 accomplishments and work, the 2002 Instream Flow Annual Compliance Report, and a Year 2 Financial Monitoring Report for the HCP Program as a whole.

#### ***HCP Program Management***

The main challenge for program managers in 2002 was to coordinate the HCP team's efforts in meeting cost commitments within City departments facing the effects of the national and regional economic downturn. During 2002, SPU reduced both its capital and operations/maintenance budget to better match a reduced water fund revenue picture. Also, development of the 2003-2004 biennial budget occurred during 2002, and HCP staff were expected to identify areas in our program where operations/maintenance expenditures could be reduced in 2003 and 2004. SPU's HCP team members worked to carefully craft their HCP program budgets to ensure that *performance* commitments, as well as cost commitments, would be met in 2002, 2003 and 2004. To achieve SPU's overall budget goals, the HCP team used creative approaches such as planning simpler, more accessible road decommissioning and stream restoration projects in 2003 and 2004 and identifying acceptable elements of long-term environmental studies that could be delayed in 2002 without affecting our ability to achieve HCP goals.

#### ***Watershed Management***

HCP activities in the watershed continued on the two parallel tracks initiated in Year 1: planning and implementing projects on the ground in the near term, and developing long-term, landscape-level plans. Interdisciplinary teams were formed to develop long-term strategic plans for

characterizing the watershed to support restoration planning, monitoring projects and habitats, prioritizing areas for restoration, and developing an information management system to support these activities. For watershed characterization, we acquired, and began analyzing geo-rectified, remotely sensed data (called MASTER). MASTER has 5-meter resolution and 50 spectral bands.

We made substantial progress on many restoration projects, and had the able assistance of many volunteers in getting projects done. Volunteers contributed a total to 2,458 hours removing invasive plants; planting conifers, deciduous trees and shrubs; collecting plants for biological diversity studies; and helping with trail mapping.

We decommissioned 8.5 miles of road in 2002, bringing the total for the first two years to 23 miles, above the 10 miles per year average expected under the HCP. Work in 2002 included the decommissioning of the 16 Road, a sensitive section of road constructed through wetland and riparian areas of Rock Creek, areas that are expected to provide exceptional rearing and spawning habitat once anadromous salmon pass Landsburg beginning in the fall of 2003. An interdisciplinary team planned the project, which involved removing road fill from riparian and wetland habitats; restoring hydrologic functions to streams and wetlands; removing Japanese knotweed, an invasive plant; and replanting the roadbed with native plants, using volunteers. To reduce sediment loading from watershed roads to water bodies, crews also did resurfacing work on nine road segments and installed cross drains on six segments as part of the road improvements program. In the planning arena, we began developing a new road inventory and classification system that will support planning of all road capital projects and annual maintenance, as well as prioritizing road projects to meet HCP ecological objectives.

In 2002, we designed and implemented the HCP's first two large woody debris projects under the HCP to restore habitat complexity, both on tributaries to Chester Morse Lake Reservoir. At Shotgun Creek, crews felled some trees into the creek; at Lost Creek crews brought logs in from off-site using an excavator. We also designed and implemented the first restoration thinning projects in riparian areas, thinning 5 acres along a stream in the lower watershed and 24 acres along a number of streams in the upper watershed. Using watershed staff and volunteers, we planted 9 acres of riparian habitat with 4,180 native conifers and hardwood shrubs at four locations in the watershed.

We completed work on the two fish passage projects that were mostly constructed in 2001 (at Webster and Shotgun creeks). We did design work on four more crossings to be constructed in 2003-04 to restore access to habitat for either anadromous fish or bull trout. We also upgraded 13 stream crossings on six road segments to accommodate peak flows and reduce sediment delivery to streams.

In December 2002, the City Council passed an ordinance authorizing the first ecological thinning project, the 45 Road Forest Restoration Unit. This project is designed to accelerate the development of forest structure and habitat typical of old-growth forest by implementing a combination of variable density thinning and planting. About 157 acres of the 321-acre site will be thinned, and 67 acres will be planted. Restoration thinning was done in the upper watershed for approximately 1,350 acres of young forest, well in excess of the 800-acre target for HCP Year 2.

Despite near-record low flows in watershed tributaries and extremely low reservoir levels during the fall of 2002, spawning surveys revealed the highest totals yet for bull trout in the upper watershed and kokanee (landlocked sockeye salmon) in Webster Creek, a tributary to Walsh Lake in the lower watershed. A total of 504 bull trout redds (nests) were found, far exceeding the

former high count of 236 redds found each year in 2000 and 2001. These numbers are well within the range expected for a viable, adfluvial bull trout population of this size, and the 2002 results indicate that spawning bull trout can gain access to tributaries even at relatively low reservoir levels. In Webster Creek the highest daily count of kokanee was 586 adults and over 370 redds were found. Both results are orders of magnitudes higher than numbers from previous years.

### ***Landsburg Mitigation***

The Landsburg Fish Passage Project was celebrated at the groundbreaking ceremony held in June, after which construction proceeded on schedule. Fish passage was completed at the aqueduct crossing in August, resulting in a series of naturally-appearing stepped pools. Sockeye, chinook and coho salmon successfully passed through these pools during the fall of 2002 to spawn above the aqueduct for the first time in 70 years. Throughout the summer instream work was completed without any citations or water quality violation notices from regulatory agencies. The downstream fish passage gate was completed in November, and Landsburg Park improvements and riparian restoration along the entrance road were completed in December. Construction on a new fish intake screen began in December.

Program development and design of the Cedar River Sockeye Hatchery Project progressed during 2002. The hatchery design team, TetraTech/KCM, working closely with SPU fish biologists, to develop the hatchery program documents. These documents include preliminary design, operating protocols, capacity analysis and an adaptive management plan. The environmental review process continued in 2002, with the Draft Environmental Impact (EIS) Statement released in September, and a Final EIS issued in March 2003. The EIS evaluated design and siting alternatives under SEPA guidelines. Construction is currently schedule to begin in 2004, subject to the outcome of a recently filed appeal to the Hatchery project's FEIS.

In the research and monitoring arena, research continued on sockeye fry. This work attempts to better understand performance of the interim sockeye hatchery at Landsburg and includes trapping, otolith marking, and counting. Juvenile sockeye research in Lake Washington is anticipated to contribute to timely assessments of abundance and distribution of juvenile sockeye and interacting species.

### ***Instream Flows***

The City manages the Cedar River water supply for multiple objectives: (1) to provide its customers in the region with a high quality, reliable, and adequate supply of drinking water; (2) to protect fisheries resources in the Cedar River and Lake Washington; and (3) to provide a measure of flood protection compatible with the City's primary water supply mission. The instream flow management strategy commits the City to a binding instream flow regime designed to improve habitat conditions for chinook, coho, sockeye, and steelhead in the regulated portion of the Cedar River.

Flow management decisions are based on many years of study and analysis of the needs of all life stages for each of the four anadromous species. Flows provide habitat for spawning, incubation, rearing of young fish, and holding for adult fish. The flow regime includes not only minimum instream flow requirements but also adaptive provisions for the allocation of supplemental flows above minimums in years when available, through operation of a multi-agency commission.

The Cedar River produced relatively large numbers of juvenile chinook and sockeye in the spring of 2002, indicating good conditions for salmon spawning, incubation and emigration. Although the return of spawning adult steelhead in the spring was disappointing, all steelhead redds were

protected from dewatering with the application of supplemental stream flows. At the request of the IFC, stream flows were held well above guaranteed levels in August and early September to provide additional benefits to instream resources. Generally, instream flow management was complicated by runoff from a near record snowpack, construction of fish passage facilities at the Landsburg diversion dam, construction of fish and flow protection facilities at the Cedar Falls powerhouse, and construction of new water treatment facilities at Lake Youngs.

In addition to these challenges, severe drought conditions began to develop in July of 2002 and persisted through December. Recorded precipitation for this period in the Cedar River watershed was the second lowest in more than 70 years of record keeping. Dry fall conditions are especially challenging for instream flow operations on the Cedar River. Owing in part to a robust reservoir storage situation at the start of the drought, high normal flows were provided for two weeks during the period of peak chinook spawning and flows were held at or above low-normal flow levels throughout the fall. Despite these challenging hydrologic conditions in the fall and early winter, managed stream flows were held at or above normal levels at all times. During the spring of 2003, the river has been producing relatively large numbers of young chinook and sockeye salmon, suggesting that these managed flows supported favorable spawning and incubation conditions during the past fall and winter. Normal weather patterns returned in January 2003, and it appears Chester Morse Reservoir will be full or near-full prior to the start of the summer drawdown season.

The interagency Cedar River Instream Flow Commission (IFC) met at least monthly throughout the year to help guide real-time instream flow management. The IFC was closely involved in the management of reservoir refill during the spring and stream flow management during the summer/fall drought. The IFC also directed the implementation of a number of aspects of the Supplemental Biological Studies Program including chinook spawning and rearing studies and the development of flow data sets for comparing regulated to unregulated flows in the Cedar mainstem.

Seattle City Light has spent 2002 modifying the Cedar Falls Powerhouse and the Masonry dam to provide fish protection and improve habitat for when this reach of river will be accessible to anadromous fish. Two tailrace barriers were constructed at the Cedar Falls Powerhouse. New mechanical devices, sensors, and electronic controls were installed in the powerhouse to maintain and regulate flow in the event of a load rejection or load reduction. Testing and fine-tuning of the automatic coordination of the new equipment will continue through 2003. In 2002, work also began at the Masonry Dam in preparation for the installation of a new valve that will provide minimum flows in the Canyon Reach above the powerhouse.